

**BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND**

AIR FORCE INSTRUCTION 11-202V3



**AIR FORCE MATERIEL COMMAND
Supplement**

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Flying Operations

GENERAL FLIGHT RULES

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This supplement implements AFI11-202V3, *General Flight Rules*. This supplement describes AFMC's general flight rules and procedures for use in conjunction with the basic AFI. It applies to all AFMC units and personnel conducting flying operations. It also applies to AFRC, ANG, and DCMA units under AFMC OPCON. This publication may not be supplemented. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command to AFMC/A3V. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include: Numerous paragraphs renumbered to synchronize with new AFI 11-202V3 numbering; Tiering, waiver authority and approval authority clarified throughout; Deleted duplicate guidance found in other instructions; Guidance added for CNS/ATM certifications and operational approvals; Guidance added for portable electronic devices and personally owned devices; Updated crew requirements table; Added guidance for non-pilot control of aircraft; Updated risk management worksheet guidance; Updated guidance for electronic media; Added guidance on Special Departure Procedures and one engine inoperative climb performance; Clarified night glidepath guidance requirements.

Chapter 1

ROLES AND RESPONSIBILITIES

1.2.1. **Waiver Process.** Route all waivers through appropriate operations channels to flying unit commanders, and the OG/CC. Use an AFMC Form 73, *AFMC Flight Operations Waiver Request*, to process the waiver. Submit T-0, T-1, and T-2 waivers to the AFMC/A3V SharePoint for review and processing. Email a final copy of T-3 waivers to AFMC/A3V after approval.

1.2.1.1.1. HQ AFMC/A3 is the waiver issuing official for Tier 0 waivers after obtaining the necessary non-AF authority permission and HAF/A3O concurrence.

1.2.1.2.1. HQ AFMC/A3 is the waiver issuing official for Tier 1 waivers after obtaining HAF/A3O concurrence.

1.2.1.3.1. HQ AFMC/A3 is the approving official for Tier 2 waivers.

1.3.1. AFMC/A3V is the OPR for the three-volume set of Flight Test (FT) instructions containing attachments for each weapon system flown in AFMC. These instructions are numbered AFI 11-2FT Volume 1, 2, and 3 and will contain the training, evaluation criteria, and operations procedures, respectively, for each weapon system. AFMC uses these instructions in lieu of AFI 11-2 MDS-specific volumes for flying operations. In the absence of published guidance, AFMC units will coordinate with HQ AFMC/A3V for approval of locally developed guidelines. These guidelines should be consistent with similar guidance specified in the appropriate AFI 11-2 MDS-specific lead MAJCOM Volumes. In addition, aircraft on loan to AFMC undergoing short-term flight test programs will be flown according to the lead MAJCOM guidance if no AFMC AFI 11-2FT-series or other guidance exists. **(T-2)**.

1.5.2. **(Added)** AFMC flying unit supplements to AFI 11-202V3 are not authorized. Units will incorporate any operational procedures into the AFI 11-2FT series as applicable **(T-2)**, and obtain AFMC/A3V review and approval of AFI 11-2FT series unit supplements prior to publication. Include AFMC/A3V and AFMC/A3O on the distribution list for approved supplements to AFI 11-2FT Volume 3.

1.10.2. AFMC accepts CNS/ATM Lead MAJCOM certifications and approvals. Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications, approvals and training requirements. If training is mandated, crews shall not use CNS equipment until specified training has been certified complete.

1.11.2. AFMC aircrew will follow guidance in the 11-2FTV3 or 11-2MDS Vol. 3. **(T-2)**.

Chapter 2

FLIGHT READINESS

2.1.2.1. **(Added)** Time spent traveling (e.g., as a passenger or in a POV) to or from a TDY location does not count as crew rest for the subsequent Flight Duty Period (FDP). **(T-2)**.

2.1.2.2. **(Added)** USAF Test Pilot School (TPS) students will not be scheduled for events that would deny them 12 hours of crew rest. However, students may elect to use school facilities (i.e., computers, data reduction equipment and audio-visual equipment) so long as it does not interfere with the opportunity for at least 8 hours of uninterrupted rest during the 12 hours immediately prior to the beginning of the flight duty period. To ensure this happens, students will depart the USAF TPS no later than 1 hour before the 8 hour window for uninterrupted rest begins. **(T-2)**. This provision does not apply to lengthening the FDP.

2.2. Flight Duty Period (FDP). AFMC/A3 authorizes OG/CCs to extend the FDP a maximum of 2 hours. To minimize risk due to fatigue, supervisors at all levels may further restrict crew duty day for events such as flight test, practice takeoffs, emergency procedures, air refueling, low level operations, low approaches, touch-and-go landings, or night operations.

2.2.2. The PIC may not extend the FDP.

2.2.3. **(Added)** For deployed crews, FDP normally begins upon arrival to the aircraft unless crew briefing occurs earlier. Aircraft commanders should apply judgment to adjust FDP start time to unique situations such as lengthy travel times from billeting. The PIC will follow AFI 21-101, *Aircraft and Equipment Maintenance Management* for determining crew chief work/rest schedules.

2.2.4. **(Added)** FCF/ACF, proficiency training, test sorties, test support sorties, and tactical events, must be completed during the first 12 hours of the FDP and are limited to a maximum of three sorties per day. **(T-3)**. Sorties are defined in AFI 11-401. FCF/ACF missions will be rescheduled if unexpected delays prevent completion of all required items within the normal flight duty period. **(T-3)**.

2.5. Alert Duty. Not applicable to AFMC.

2.7.1.8. **(Added)** Any assigned, attached, or temporary duty aircrew member involved in a Class A or B mishap will be administratively grounded by the OG/CC immediately following the mishap. **(T-2)**. Any aircrew member involved in a Class A mishap will not perform aircrew duties in AFMC assigned aircraft until re-authorized in writing by AFMC/A3. **(T-2)**. Forward copies of all grounding actions to AFMC/A3V and coordinate all return to flying status actions for Class A mishaps through AFMC/A3V for AFMC/A3 approval. Any aircrew member involved in a Class B mishap will not perform aircrew duties in AFMC assigned aircraft until re-authorized in writing by the OG/CC. **(T-3)**. Copies of all relative actions will be maintained in section V of affected individual's training folder. **(T-2)**.

2.8.1. **Fatigue Countermeasure Medications.** Use of go and no-go medication is not authorized unless approved in accordance with current AF/SG policy. **(T-2)**.

2.9.2. **Sunglasses.** Sunglasses which are authorized in AFI 48-123 are approved for flight.

2.9.4. Aircrew must complete the Aircrew Flight Equipment Training (LL06) Laser Eye Protection module and comply with provisions in AFI 48-139, *Laser and Optical Radiation Protection Program* prior to issue or use of aircrew laser eye protection.

2.9.5. **Night Vision Device (NVD) Operations.** Operations and training requirements for NVD operations are specified in AFI 11-2FT, Vol 1 and 3.

Chapter 3

GENERAL FLIGHT RULES

3.8. Authorized Resources for Flight and Mission Related Duties. Aircrew members will attempt to use official Air Force provided websites and hardware as a first choice. If not available use US Government provided websites when possible. Aircrew members assume responsibility for data verification when utilizing commercial planning websites or infrastructure.

3.9.3. AFMC authorizes electrical connection of PEDs to aircraft power, data, or antennae with written aircraft Program Manager approval.

3.9.4.2. When approved IAW AFI 11-215 AFMC SUP, PEDs may be used on AFMC aircraft. These systems will not replace existing equipment and will not be used as the sole means of navigation nor interfere with accomplishment of normal in-flight duties.

3.9.4.3. Personally owned devices and/or software are not authorized for in-flight duties. **(T-2)**. Additionally, personally owned devices may not be used while performing primary aircrew duties. **(T-3)**.

3.9.5.1. **(Added) Fighter/Trainer/Attack Aircraft.** The use of hand-held cameras in single-seat aircraft is prohibited. **(T-2)**. Cameras are authorized in multiple seat fighter/trainer/attack aircraft provided the individuals authorized will not actively control the aircraft simultaneously and coordinate photo activity with the PIC. Only aerial photography personnel (AFSC 3VXXX) may perform photographer duties for test missions requiring photo-data collection. **(T-3)**. Refer to AFI 11-2FTV1, *Flight Test Aircrew Training*.

3.9.5.2. **(Added) All Other Aircraft.** The aircraft commander may approve the use of cameras in flight.

3.10.2. **Surface Movement Guidance and Control System (SMGCS).** SMGCS taxi operations are not authorized. **(T-2)**. Units wishing to gain approval and develop a training plan will reference 11-2FTV1 and coordinate with A3V via a Form 73.

3.15.4. Reduced or light-out operations within restricted and warning areas are approved for AFMC aircraft when operational or test requirements dictate. OG/CC will establish policies for such lighting in the unit supplement to AFI 11-2FTV3, *Flight Test Operations Procedures*.

3.16.1.4. **(Added)** UAS with autonomous takeoff and landing capability are authorized to depart and land at OG/CC approved runways without the use of runway lighting aids. OG/CC shall determine additional mitigation procedures as required (runway sweeps, chase vehicle procedures, NOTAM publishing, sensors required) for unlighted runway operations.

3.20. Parachutist airdrops will be conducted according to AFI 11-410, *Personnel Parachute Operations*. Airdrop procedures are defined in AFI 11-2FTV3.

3.23.3. **Terrain Awareness and Warning Systems (TAWS).** For operational, training and proficiency sorties, AFMC aircrew will follow basic and MDS specific guidance in AFI 11-2FTV3. **(T-2)**. Test sorties will follow specified guidance in an approved test plan, if different from AFI 11-2FTV3. **(T-2)**. In the event no guidance is published in AFI 11-2FTV3, refer to lead MAJCOM guidance if appropriate.

3.23.4.1.1. **(Added)** If properly certified for the phase of flight and used by qualified aircrew, GNSS equipment may be used as the primary means of navigation. Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications.

3.23.5.1. **(Added)** If properly certified for the phase of flight and used by qualified aircrew, RNAV Equipment other than GNSS may be used as the primary means of navigation. Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications.

3.24.3. When operating outside restricted or warning areas and in standard formation, one aircraft in the formation will display appropriate lighting. **(T-2)**. Others may operate with reduced lighting as safety, operational and test conditions permit.

3.31.2. Use of vision restricting devices during takeoffs and landings is approved when required by a test plan. Safety observers will be pilot qualified in the aircraft flown, have direct access to the flight controls, have full view of the flight instruments, and be able to see outside. **(T-2)**.

3.32.2. Guidance for practicing emergency procedures is contained in AFI 11-2FTV3 and the MDS specific attachments.

3.32.3.1. **(Added)** The OG/CC may allow a Federal Aviation Administration (FAA) flight examiner to observe pilot or flight engineer performance for an airline transport pilot or flight engineer qualification evaluation given as part of an Air Force checkride. The FAA flight examiner will occupy an observer position only. All restrictions of this supplement apply. Field units will retain a copy of the written approval for 2 years. Refer to AFI 11-401 Table 1.1 and DoD 4515.13-R, *Air Transportation Eligibility* for additional guidance.

Chapter 4

PREFLIGHT

4.1.1. **(Added)** All one-time flights of aircraft (including but not limited to un-airworthy/crash-damaged, flight envelope restricted, etc.) require HQ AFMC/A3 approval. Proposed flights with any engine or primary aircraft system affecting safety of flight inoperative, unless required under an approved test plan, require HQ AFMC/A3 approval (for example, landing gear, engines, IFR capability, hydraulic, electrical, fuel, or flight control). Maintenance downgrade of Red “X” does not constitute operational approval. Submit requests for operational approval, to HQ AFMC/A3V for coordination. The package should include as a minimum aircraft history, engineering analysis/coordination, a detailed aircrew Risk Management analysis, and flight restrictions. See AFMCI 11-207, AFMC Close Watch Mission Monitoring, for additional sortie reporting requirements.

4.1.2. **(Added) Crew requirements.** Table 4.1. lists pilot requirements and restrictions when flying AFMC aircraft. In addition, reference AFI 11-401 AFMC SUP.

Table 4.1. (Added) Pilot Requirements and Restrictions.

	A	B	C	D	E
R U L E	If Aircraft Is	And If	Then Pilot(s) (Note 1)	And	Exceptions and Restrictions (Note 2, Note 4)
1	Cargo Tanker Bomber E-3 E-8	A passenger or individual on an orientation flight is onboard	Must be a MP (MC for co-pilots) or higher	Other aircrew members must be qualified or monitored by instructor of the same specialty	OG/CC's may authorize one FP to fly with an MP or IP.
2	Cargo Tanker Bomber E-3 E-8	A VIP or Non-qualified person occupies a mandatory pilot position	In command must be an IP	Another qualified pilot must be onboard, and no passengers will be onboard	1. OG/CCs may authorize: a. Non-pilots to occupy a pilot position only during non-critical phases of flight in day VMC. b. Non-qualified pilots to occupy a pilot position during critical phases of flight if the need is fully justified.

					<p>c. A waiver to the requirement to have an additional pilot onboard on a case-by-case basis.</p> <p>d. TPS graduates or TPS students performing qualitative flying evaluations in conjunction with a TPS syllabus event or short term qualitative evaluations to occupy a pilot position during non-critical and specific critical phases of flight as defined in AFI 11-2FTV3.</p> <p>2. Another qualified pilot is not required when the IP is training pilot(s), or when flight is part of a TPS syllabus or qual/eval flight IAW AFI 11-2FTV1&3.</p>
3	Fighter (Note 3) Trainer (Note 3) U-2/TR-1	A non-qualified pilot occupies the mandatory pilot position or will perform takeoffs or landings from any position	In command must be an IP		OG/CCs may authorize non-qualified pilots to occupy the mandatory pilot position if the need is fully justified.
4	Fighter (Note 3) Trainer (Note 3) U-2/TR-1	A VIP or non-pilot on an orientation flight occupies a position with a set of flight controls	In command must be an IP		OG/CCs may authorize highly qualified MPs to fly non-VIP military personnel on orientation flights.

5	All Aircraft	A MESP occupies a position with a set of flight controls	In command must be a MP or higher		MESPs must not occupy a mandatory pilot position (Note 3).
6	Helicopters	A person other than a qualified helicopter pilot occupies a pilot position	In command must be an IP		The IP must perform all maneuvers during critical phases of flight and occupy the right seat pilot position except when training unqualified helicopter pilots or qual flight IAW AFI 11-2FTV1. For UH-1, also refer to AFI 11-401, para 1.12.2.3.

NOTES:

1. Pilots in this column must be current and qualified.
2. Document OG/CC authorizations/waivers in writing (method determined locally).
3. Dual cockpit fighters and trainers have only one mandatory pilot position, the front cockpit. Subject to the restrictions in AFI 11-401, Aviation Management, para 1.12.1, and this Table 4.1., specifically, OG/CC's may authorize non-pilots to occupy a non-mandatory crew position. Two seat fighters and T-38s are not considered dual controlled aircraft.
4. Use of Column B (occupying a mandatory pilot position during critical phases of flight) for AFTC personnel O-6/GS-15 and above is elevated to the AFTC/CC. AFMC/A3 is the approval authority for non-AFTC O-6/GS-15 personnel. These authorities cannot be further delegated nor are they to be confused with AFI 11-401 Orientation Flight approval authorities.

4.1.3. **(Added)** Only mission qualified, mission essential personnel, operational support fliers, or Flight Examiners IAW AFI 11-202V2, *Aircrew Standardization/Evaluation Program* AFMC Sup are permitted on **(T-2)**:

4.1.3.1. **(Added)** Functional check flights (except O-8F). **Exception:** Minimum number of maintenance technicians needed to perform airborne FCF duties that the aircrew cannot complete may fly on Functional Check Flights (FCF) as MESPs. This does not preclude requisite training for crewmembers undergoing FCF mission qualification IAW AFI 11-2FTV1.

4.1.3.2. **(Added)** The first flight of a new aircraft.

4.1.3.3. **(Added)** Aircraft carrying hazardous materials (AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments*).

4.1.3.4. **(Added)** Flights that the OG/CC or other authority defines as hazardous and/or higher than safety reviewed LOW risk test missions.

4.1.3.5. **(Added)** Flights to identify the flight characteristics of aircraft altered by a configuration change.

4.1.3.6. **(Added)** Flights to test or check the structural integrity of airframes or engines.

4.1.3.7. **(Added)** Flights to discover or expand flight envelopes.

4.1.3.8. **(Added)** Record attempts.

4.1.4. **(Added) Aircraft Delivery.** AFMC depot aircrews will accomplish aircraft pickup and delivery to and from depot facilities to the maximum extent unit local mission requirements allow.

4.2.1. **(Added)** The PIC will not allow non-pilots to control the aircraft during critical phases of flight without specific OG/CC approval. **(T-2).** **Exception:** TPS graduates or TPS students performing qualitative evaluations in conjunction with a TPS syllabus event or short term qualitative evaluation mission IAW 11-2FTV3.

4.5.1.3.1. **(Added)** AFMC aircrews will review the ASRR (and GDSS if required) when planning missions to other than local area airfields. **(T-2).** A local area airfield is defined as an airfield (civil, military, or joint use) used by a unit for flight operations where local airfield information is known and routinely monitored by the operations supervision. A list of local area designated airfields will be approved by the Unit Commander and published in the unit local area procedures instruction. **(T-2).** General ASRR restrictions (example: day only, VMC only, etc.) are applicable to all AFMC operations. Aircraft specific restrictions apply to AFMC users of like aircraft. The ASRR may not be used to grant relief from any guidance contained in an AFI or AFMC supplement. **(T-2).**

4.5.1.6. Unit Commanders will ensure the Avian Hazard Advisory System (AHAS) is available and accessible to unit flight supervisors, supervisors of flying (SOF), scheduling offices, and aircrews. **(T-2).** Units will develop procedures for risk assessment of bird hazards and will provide guidance on what techniques and procedures are used to fly in areas that have been forecasted or reported to have a bird advisory hazard of MODERATE or greater. **(T-2).** Some risk management tools that may be employed by aircrews include: selecting another route during mission planning; planning an alternate mission if an alternate route shows the same threat; planning to enter the route during a period when the AHAS/BAM indicates a lower threat; changing the route or leg altitude to one less affected by the avian activity; planning to enter or exit at an alternate point if available; and avoiding flight near food sources (for example, water and landfills). Reference 11-2FTV3 for additional bird avoidance guidance.

4.5.1.12. **(Added) Risk Management (RM) Worksheets.** All AFMC flying units will use an RM assessment worksheet to identify and manage risks associated with their flying mission. **(T-2).** The assessment worksheet will have four areas: human, mission, media, and machine. Each area will have command defined elements to include Human (crew rest, crew currency), Mission (complexity, risk level), Media (weather, time of day, level of IFR/VFR ATC traffic separation services provided), and Machine (aircraft MX factors), as well as elements defined and tailored at the unit level. **(T-2).** The worksheet will use a unit defined weighting/scoring system with a total that is used to determine the overall assessed risk for the flight. **(T-2).** Unit commanders will establish threshold criteria and the approval level for flights identified as elevated risk. At a minimum, the assessment will be reviewed by a government or military unit designated operations supervision authority other than the aircraft commander prior to execution of that sortie. **(T-2).** Worksheet data for all flights will be tracked and reviewed periodically by the

OG/CC. Analysis of data by the group from the worksheet assessments will be reported annually (Oct-Sep fiscal year) to AFMC/A3V by 1 Dec each year.

4.8.1. **Use of Civil Airports.** OG/CCs may authorize operations at civil airports not P-coded in an Enroute Supplement if the airport manager grants permission in advance. Consider items (not inclusive) such as government fuel contract, airfield landing fees, airfield entry control procedures, airfield surveillance, airfield security, and rescue/fire response.

4.10.1. The OG/CC will designate all UAS authorized airfields in the unit supplement to AFI 11-2FTV3. **(T-2).** Prior to operating out of a new airfield, a site-survey will be conducted to review airfield layout, obstacles (close & distant) airspace requirements, and any local unique procedures. **(T-2).** Notify HQ AFMC/A3V when a site survey has been completed and endorsed by the OG/CC.

4.12.1. **Authorized Sources.** When DoD weather service is not available or incomplete, aircrews will obtain weather by any means possible, to include nearest flight service station (FSS), foreign military, civilian automatic terminal information service (ATIS), direct user access terminal system, (DUATS), through fixed base operators, etc. **(T-2).**

4.13.1.1. **Non-USG terminal Procedures.** The OG/CC may approve the use of Non-USG terminal procedures after a TERPS review. The single point of contact for all requests is the AFMC TERPS office (HQ AFMC/A3O, DSN 986-0061/0123 commercial (937) 656-0060, fax 674-2620 commercial (937) 904-2620). Submit requirements directly to the TERPS office immediately upon mission notification. Minimum 15 days advance notice is desired. Instrument procedures are approved for specific missions, not blanket use. PICs will comply with restrictions and recommendations contained in the TERPS evaluation. Approval request must include airfield name/ICAO, desired procedure(s), copy of approach plate (or Jeppesen page number), mission date, POC and phone number. Locally developed training must include differences in symbology, language or translation, weather minimums, host nation NOTAM retrieval, equipment and airspace requirements. **(T-2).**

4.13.2. Electronic media is acceptable for flight if it complies with AFI 11-2FTV3, AFI 11-215 AFMC SUP, and has Program Manager approval.

4.13.6.2. **(Added)** Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications.

4.14.3. Aircrews may continue a mission with an expired database if the database information required for the planned flight (to include potential alternate or divert airfields) can be verified with current FLIP.

4.15.1.5. **(Added)** Military Authority Assumes Responsibility for Separation of Aircraft (MARSA). The unit OG/CC is authorized to develop letters of agreement for special IFR operations according to the MARSA concept. See FLIP GP for further guidance. Pilots cannot arbitrarily declare MARSA.

4.15.2.1.2. Refer to AFI 11-2FTV3 for specific UAS weather requirements.

4.15.3.1.3. **Required IFR Alternate.** AFMC UAS alternate airfield policy will be IAW fixed-wing aircraft policy and IAW specific MD requirements in AFI 11-2FTV3. **(T-2).**

4.15.3.3.1. Aircraft may hold at a remote or island destination, instead of designating an alternate airport, if all of the following conditions are met. There must be enough fuel on board,

in addition to required reserves, to hold for at least 1 hour after arriving at the initial approach fix. From 1 hour before until 2 hours after estimated time of arrival, the worst weather is forecast to be at or above that required for an airport to qualify as an alternate. The forecast crosswind component corrected for runway condition reading (RCR) is within the recommended zone of the aircraft's landing crosswind chart.

4.15.3.4.3. AFMC UAS alternate airfield policy will be IAW fixed-wing aircraft policy and IAW specific MD requirements in AFI 11-2FTV3. **(T-2)**.

4.16.2.5. **Special VFR (SVFR)**. Helicopter aircrews, including tilt-rotor when operating in helicopter mode, are authorized to fly under SVFR in FAA airspace or IAW appropriate host-nation guidance.

4.17.2.1. **(Added) Parachutist Manifests**. All parachutists will be listed on DD Form 2131, *Passenger Manifest*, or AFMC Form 56, *Parachutist Jump Schedule*. **(T-2)**. Parachutists will provide the aircrew with a copy of the manifest or AFMC Form 56, and the aircrew will file this list with the mission paperwork. **(T-2)**.

4.18.3. Refer to AFI 11-2FTV3 for additional fuel requirements.

4.19.1.3.1. **Foreign Object Damage (FOD) Hazards**. Crewmembers, maintenance engineering support personnel (MESP), mission essential personnel (MEP) and operational support fliers will not wear rings, scarves, pins, wigs, hair pieces, ornaments, barrettes, clips, earrings, and other hair fasteners made of leather, plastic, or metal while performing crew duties in or around the aircraft. **(T-2)**. Additionally, these items are prohibited for all occupants of ejection seat-equipped aircraft. **(T-2)**. Other items will be properly secured to minimize foreign object damage (FOD) risk. **(T-2)**. PICs will ensure that passengers wearing these items do not create a FOD hazard. **(T-2)**.

Chapter 5

DEPARTURE

5.1.1. Minimum Takeoff Weather. Command takeoff alternate requirements for tanker/transport/bomber aircraft are listed in table 5.1. For fighter/trainer/UAS aircraft, the OG/CC may authorize takeoff for operational requirements when existing weather is below landing minimums if the visibility is at least 1,600 feet runway visual range (RVR) or 1/4-mile and a suitable alternate is located within 30 minutes flying time. The reported and forecast weather at the alternate must meet that required for an airport to qualify as an alternate, and the forecast crosswind component corrected for RCR must be within the recommended zone of the aircraft's landing crosswind chart.

Table 5.1. (Added) Departure Minimums and Departure Alternate Requirements for Tanker/Transport/Bomber Aircraft.

If departure weather is:	A departure alternate is:
At or above authorized ceiling and visibility landing minimums.	Not required.
Below either authorized ceiling or visibility minimums but RVR is 1600 or greater (visibility ¼ mile or greater) -OR- Below either authorized ceiling or visibility minimums but RVR is 1200 or greater at the approach end and 1000 or greater at the departure end and runway centerline lights operational. (See Note 3)	Required. (See Notes 1 and 2)
NOTES: 1. Departure alternate must be located within 30 minutes flight time with weather reported and forecast at or above approach minimums or 200- ½ (RVR 2400), whichever is higher, for 1 hour after takeoff. -OR- Departure alternate must be located within 2 hours flight time with weather forecast to be at least 500-1 above approach minimums but no lower than 700-2 for a precision approach or 800-2 for a non-precision approach for ETA at the alternate +/- one hour. 2. Aircraft must be able to maintain minimum enroute altitude to the alternate if an engine fails. 3. Must have centerline lighting and dual RVR display slave readouts for both approach and departure ends of the runway. For runways with triple RVR readouts, the pilot may use any two consecutive readouts to determine if the runway is usable for departure (aircraft performance permitting). For example, approach end RVR=800, midfield RVR=1700, departure end RVR=1000. If aircraft performance and runway length will permit taking off at midfield, this runway is usable for takeoff.	

5.3.1. (Added) VFR departures are authorized under the following conditions:

5.3.1.1. (Added) There is no authorized IFR departure procedure for the airport

5.3.1.2. **(Added)** When the aircraft is unable to depart using one of the IFR departure methods contained in AFMAN 11-217V1 or AFI 11-202V3.

5.3.1.3. **(Added)** When the sortie is planned as a VFR flight

5.3.2. **(Added)** Aircrew departing VFR along an IFR departure path will ensure they can meet applicable obstacle climb gradients, with all engines operating, to the appropriate VFR cruise altitude or minimum IFR altitude. Additionally, aircrew departing VFR are authorized to reduce applicable IFR climb gradients by up to 48'/NM for one engine inoperative performance planning. **Note:** This is applicable to obstacle climb gradients, not ATC climb gradients. If unable to determine whether a given climb gradient is obstacle or ATC, assume it is an obstacle climb gradient.

5.3.3. **(Added)** Aircrew departing VFR along an IFR departure path that cannot meet the applicable obstacle climb gradients require detailed planning to ensure obstacles and terrain are avoided. Operations IAW this guidance and authorization are to be used as a last resort when the mission justifies the increased risk and require OG/CC approval. Aircrews are authorized to depart VFR without meeting IFR departure procedure restrictions along the planned departure route with one engine inoperative while complying with the following guidance:

5.3.3.1. **(Added)** Use radar advisory, monitoring, or control services when practical, and ensure flight following by any available means.

5.3.3.2. **(Added)** Consider reducing weight and/or delaying the mission until environmental conditions improve.

5.3.3.3. **(Added)** Crews must be knowledgeable of and comply with guidance in AFMAN 11-217V2.

5.3.3.4. **(Added)** Crews are responsible for terrain and obstacle planning/avoidance and must climb to the minimum IFR or VFR cruise altitude as soon as practical.

5.3.3.5. **(Added)** Crews will use all available resources to mitigate risk. This includes but is not limited to supervisors, ORM, flight manual guidance, and aircraft commander discretion.

5.3.4. **(Added)** VFR departures not following an IFR departure path also require detailed planning to ensure obstacles and terrain are avoided. The PIC is ultimately responsible for ensuring aircraft performance and weather conditions allow for obstacle clearance along the planned departure (and emergency return) path with one engine inoperative.

5.4. IFR Climb Performance. Units wishing to develop new SDPs must coordinate through AFMC/A3V via an AFMC Form 73. The OG/CC may authorize the use of published SDPs for OEI departure planning when necessary. This approval is limited to Jeppesen generated MDS/Airport specific SDPs IAW criteria and data approved by HQ AFFSA/A3O. Units will confirm the Jeppesen-generated MDS/airport specific SDPs produce sufficient performance data needed for safe operations. Units must validate the performance data against the aircraft flight manual prior to first use. SDP usage and risks shall be addressed during the safety review board for test missions and the sortie RM process. Fly SDP routing that differs from clearance routing only in an emergency, unless approved by ATC. Prior to using SDPs aircrew will complete AFMC command specified training plan IAW AFI11-2FTV1 and document certification on AF Form 1381, *USAF Certification of Aircrew Training* and Letter of X.

5.4.3.1.2.1. AFMC/A3 authorizes unit flight operations supervisor to subtract up to 48'/NM from the required obstacle climb gradient.

5.5.2.2.1. OG/CCs may approve aircrew to fly VCOA procedures after completion of an AFMC/A3V approved VCOA training plan

5.5.2.2.2. Units requesting the use of a Reduced Takeoff Runway Length ODP must coordinate through AFMC/A3V via an AFMC Form 73.

5.5.2.6. **MAJCOM Certified Procedure.** Units wishing to receive special MAJCOM certification for procedures must coordinate through AFMC/A3V via an AFMC Form 73.

Chapter 6

ENROUTE

6.3.2.3. AFMC approves use of higher speeds IAW paragraph 6.3.2.3.

6.4.1.2. Thunderstorm avoidance procedures are listed in AFI 11-2FTV3. Missions requiring planned penetration of a thunderstorm require HQ AFMC/A3 approval.

6.8.4. Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications.

6.9.1. Refer to AFMC/A3V SharePoint for the current MDS specific CNS/ATM certifications.

Chapter 7

ARRIVAL

7.1.5.1.4. **(Added)** Cat II and Cat III operations in IMC below Cat I minimums are restricted to approved test plans only. **(T-2)**. Certification will be handled on a case-by-case basis. Submit requests to HQ AFMC/A3V.

7.4.3. The OG/CC may authorize the accomplishment of self-contained approaches as part of an approved test plan or FCF profile. Flight conditions will be day VMC unless the approach is TERPS-certified according to AFI 11-230.

7.4.3.1. **(Added)** UAS platforms should fly the three-dimensional track of a published approach if an appropriate one is available. If no published approach is available, or if a valid operational requirement exists, SCAs for UAS platforms will be constructed in accordance with the procedures outlined in AFI 11-2FTV3. **(T-2)**. SCAs developed IAW AFI 11-230 are approved for use in IMC. Weather minima for these approaches are published in AFI 11-2FTV3.

7.4.4. PRM approaches are authorized for AFMC aircraft provided the aircraft is equipped with appropriate IFR equipment to include dual VHF radios, and aircrew training is accomplished and documented IAW AFI 11-2FTV1.

7.4.6.5. **(Added)** For UAS, in accordance with AFI 11-2FTV3.

7.4.7. **(Added)** Radar approaches (PAR/ASR) are authorized as published in FLIP.

7.5.1.1. **(Added)** For other than Category II/III Instrument Landing System approaches, radar altimeters should be set to HAT/HAA (unless other installed equipment and/or flight manual procedures direct otherwise). However, primary reference for MDA/DA is the barometric altimeter.

7.8.2.2.1. AFMC/A3 authorizes unit flight operations supervisors to subtract up to 48'NM from the required missed approach climb gradient.

7.10. Reduced Same Runway Separation. RSRS is authorized for AFMC aircrews per AFI 13-204V3, *Airfield Operations Procedures and Programs*.

7.11.1. **(Added) Helicopter Night Operations.** The OG/CC may authorize helicopters on high priority operational or test missions to operate into and from unlighted areas as long as all available terrain and obstacle information is studied and all available lighting is used. Consideration must be given for the use of parachute flares or prepositioning other forms of lighting. Running takeoffs and landings will only be made to a runway or taxiway that is clearly discernible by lights. **(T-3)**. On all other missions (training, routine operational, or test missions, etc.), landings into remote and operational sites between official sunset and official sunrise are permitted if the mission is authorized and accomplished according to an approved night vision goggle (NVG) program or under the following conditions: the area is outlined by discernible lights or parachute flares, the pilot is familiar with the landing area through review of the site folder, and a daytime landing or overflight is accomplished. **(T-3)**.

7.12. Landing with Hot Armament. Units that conduct operations with live armament will publish procedures for live/hung ordnance in the unit supplement to AFI 11-2FTV3, local airfield operations instructions, and in-flight guide. **(T-2).**

7.13. Touch-and-Go Landings. Touch-and-go landings are authorized in any command operated aircraft provided all requirements of AFI 11-2FTV3 and AFI 11-2FTV1 are met.

7.16. Practice Instrument Approaches Under VFR. AFMC crews are authorized to conduct practice instrument approaches under VFR in accordance with the guidance listed.

7.17. Night VMC Approaches. Unless mission qualification and/or a specific training requirement dictates (e.g. NVGs, tactical approaches/landings, etc.), when operating in night VMC, aircrew will plan to conduct landings with the aid of precision glide path guidance. Glide path guidance can be either from a precision instrument approach or from a visual glide slope indicator. Additional information on visual glide slope indicators is contained in AFMAN 11-217V1. Aircrew should complete a thorough review of the point of intended landing and the surrounding terrain and obstacles prior to arrival. Flying a non-precision approach at night without additional visual glide path indications to log a semi-annual event is not a specific training requirement. The Test Wing Commander (delegable to OG/CC) is the approval authority to allow aircrew to plan operations at night without the aid of precision glide path guidance.

CATHERINE A. CHILTON, Major General, USAF
Director of Air, Space, and Information Operations

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-202V2, *Aircrew Standardization/Evaluation Program*, 12 September 2010
AFI 11-202V3, *General Flight Rules*, 7 November 2014
AFI 11-2FTV1, *Flight Test Aircrew Training*, 20 September 2011
AFI 11-2FTV3, *Flight Test Operations Procedures*, 16 November 2011
AFI 11-410, *Personnel Parachute Operations*, 4 August 2008
AFI 13-204V3, *Airfield Operations Procedures and Programs*, 1 September 2010
AFI 21-101, *Aircraft and Equipment Maintenance Management*, 21 May 2015
AFI 48-139, *Laser and Optical Radiation Protection Program*, 30 September 2014
AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipment*, 3 December 2012
DoD 4515.13-R, *Air Transportation Eligibility*, November 1994

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*
AFMC Form 73, *AFMC Flight Operations Waiver Request*
AFMC Form 56, *Parachutist Jump Schedule*
AF Form 1381, *USAF Certification of Aircrew Training*
DD Form 2131, *Passenger Manifest*

Abbreviations and Acronyms

ACF—Acceptance Check Flight
AHAS—Avian Hazard advisory System
BAM—Bird Avoidance Model
DCMA—Defense Contract Management Agency
DUATS—Direct User Access Terminal
FCF—Functional Check Flight
MESP—Mission Essential Support Personnel
OG/CC—Operations Group Commander
OPCON—Operational Control
POV—Privately Owned Vehicle
RCR—Runway Condition Reading
SOF—Supervisor of Flying

TPS—Test Pilot School

Terms

Critical Phase of Flight —For the purposes of this AFI, this term includes: terminal area operations including takeoff and landing, low-level flight, air refueling, close formation, airdrop, actual weapons delivery, simulated weapon delivery (other than level), tactical/air combat operations, envelope expansion test points, and any aerial demonstration. NVD wear in and of itself does not constitute a critical phase of flight.

OG/CC —The operations group commander or equivalent authority having Flight Operations Authority (FOA) for the aircraft under his or her command. See AFI 11-401 AFMC SUP.